

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
26 February 2004 (26.02.2004)

PCT

(10) International Publication Number  
**WO 2004/016545 A3**

(51) International Patent Classification<sup>7</sup>: **B67D 1/08**

(21) International Application Number:  
PCT/CA2003/001241

(22) International Filing Date: 19 August 2003 (19.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/404,159 19 August 2002 (19.08.2002) US

(71) Applicant (for all designated States except US): **ICE-FLOE TECHNOLOGIES INC.** [CA/CA]; 40 King Street West, Suite 5210, Scotia Plaza, Toronto, Ontario M5H 3Y2 (CA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CHIUSOLO, Sam** [CA/CA]; 96 John Street, Port Perry, Ontario L9L 1C4 (CA).

(74) Agent: **KAPLAN, Adrian, M.**; Dimock Stratton Clarizio LLP, Suite 3202, Box 102, 20 Queen Street West, Toronto, Ontario M5H 3R3 (CA).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

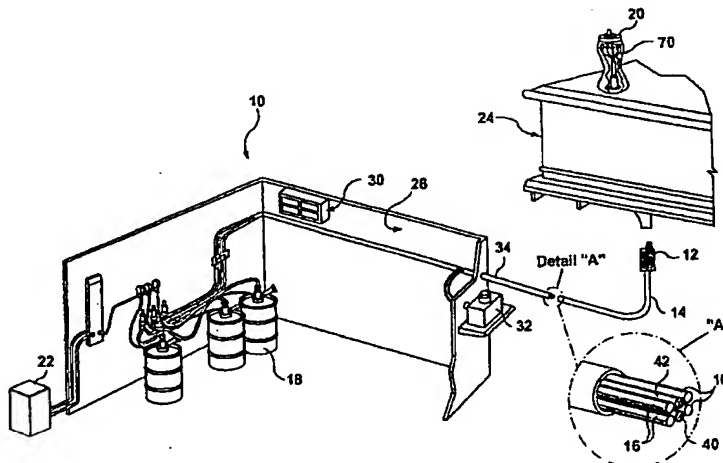
**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
13 May 2004

[Continued on next page]

(54) Title: **INLINE BOOSTER FOR BEVERAGE DISPENSING SYSTEM**



(57) Abstract: A beverage distribution system is provided for boosting the cooling capacity of conventional beer dispensing systems. This reduces the tendency of beer to foam prior to the dispensing of same. The beverage distribution system has a container for storing a beverage and a cooler for refrigerating the container and the beverage stored therein. The system also includes a beverage dispensing unit and a distribution line for delivering the beverage from the container to the dispensing unit. A trunk line extends substantially from or near the cooler to or near the dispensing tower. It includes the distribution line and a refrigerant line in an abutting relationship. The system has a heat transfer unit connected to the trunk line which is filled by refrigerant accumulating from the refrigerant line. The heat transfer unit has a coil connected to the distribution line for immersing a portion of the beverage in a bath of the refrigerant. A refrigeration loop circulates refrigerant through the heat transfer unit. Methods for chilling a beverage and reducing the foaming of beer using the beverage distribution system are also provided.

WO 2004/016545 A3

**WO 2004/016545 A3**



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/CA 03/01241

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B67D1/08

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B67D F28D F25D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 2 327 748 A (SCOTTISH & NEWCASTLE PLC) 3 February 1999 (1999-02-03)	1,3-9,13
X	page 17, line 1 - line 19 -----	10-12
Y	US 4 730 463 A (STANFILL TED M) 15 March 1988 (1988-03-15) column 2, line 4 - line 54; figure 1 -----	1,3-9,13
X	US 5 309 987 A (CARLSON V R) 10 May 1994 (1994-05-10) figure 1 -----	10,11
X	EP 0 244 031 A (UMMELS JOHANNES A M) 4 November 1987 (1987-11-04) abstract; figure 2 column 4, line 51 - line 53 -----	10-12
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

3 December 2003

Date of mailing of the international search report

12 03. 2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Desittere, M

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/CA/01241

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/036582 A (FOSTER PETER THOMAS ;SCULLION SIMON DANIEL (GB); BASS PLC (GB); SM) 25 May 2001 (2001-05-25)	10-12
A	page 31, line 6 - page 32, line 7; figure 20	1,3,4,7, 13
X	----- US 2 342 299 A (PEET GERALD D) 22 February 1944 (1944-02-22)	10
A	page 1, column 1, line 48 - line 50; figures 1,8	1-3,7,8, 13
A	----- GB 2 194 840 A (KOOLTECH LIMITED) 16 March 1988 (1988-03-16) page 1, line 39 - line 109 -----	1-4,7,8, 13

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA 03/01241

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

Product claims 1-9 relate to a beverage distribution system comprising a beverage container being cooled by a cooler, a dispensing unit, a trunk line comprising a distribution line and a refrigeration line, and a heat transfer unit. Method claim 13 relates to a method for obtaining a beverage distribution system which chills a beverage.

1.1. claims: 10-12

Claims 10-12 relate to a heat transfer unit comprising a housing, an inlet tube, an outlet tube and a further tube.

---

2. claims: 14-16

Claims 14-16 relate to a method for reducing foaming of beer which is dispensed from a distribution system, by cooling a keg and controlling certain pressure and flowrate values.

---

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Publication No

PCT/CA/03/01241

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2327748	A	03-02-1999	NONE	
US 4730463	A	15-03-1988	NONE	
US 5309987	A	10-05-1994	NONE	
EP 0244031	A	04-11-1987	NL 8601082 A AT 48826 T DE 3761204 D1 DK 209787 A EP 0244031 A1 NO 871746 A	16-11-1987 15-01-1990 25-01-1990 29-10-1987 04-11-1987 29-10-1987
WO 0136582	A	25-05-2001	WO 0136582 A1 AU 1169500 A BR 9917559 A CA 2391876 A1 EP 1232243 A1 GB 2373567 A JP 2003514553 T NO 20022352 A US 2003211219 A1	25-05-2001 30-05-2001 16-07-2002 25-05-2001 21-08-2002 25-09-2002 22-04-2003 10-07-2002 13-11-2003
US 2342299	A	22-02-1944	NONE	
GB 2194840	A	16-03-1988	NONE	